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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Samuel Neto

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EXAMINER

NGUYEN, COLETTE B

ART UNIT

PAPER NUMBER

4162

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/565,731	Applicant(s) NETO ET AL.	
	Examiner COLETTE NGUYEN	Art Unit 4162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02/02/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02/02/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1 to 17** are rejected under 35 U.S.C. 102(b) as being anticipated by Eberle et al.(US 5,792,719).

3. Eberle teaches a supported catalyst used in gas-phase oxidation comprising an inert support body and a catalytically active mixed oxide composition comprising one or more oxides selected from the group of transition metal oxides consisting of titanium oxide(TiO_2) at 5-90% by weight; of Vanadium Pentoxide (V_2O_5) at 1-50% by weight; with various promoters such as Cesium (Cs), and/or phosphorous (P). An aqueous copolymer dispersion of vinyl acetate/ethylene of 10-50% by weight is used as a binder for the coated catalysts (Col 2,3,4,5,6). The completed reaction was in situ in the two-bed packing reactor. The composition of the coated catalyst and the process details encompass the composition and the process of the claims.

4. Regarding Claims 2 to 4. Eberle (719) teaches specifically an aqueous slurry of copolymer dispersion of vinyl acetate/ethylene, which encompasses the particular ethylene-vinyl acetate copolymers as claimed in claim 4.

5. Regarding Claim 5. Eberle teaches 5-90% by weight of TiO_2 , comparing to 60-99% by weight as claimed. Also, for V_2O_5 the percent by weight is 1-50%, comparing to

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1-40% by weight as claimed. The parameters and compositions encompass or overlap the parameters and the compositions of the claims

6. Regarding Claim 6. Eberle teaches a use of promoters' such as Cs compound of 0.01-1.0 wt% and P compound at 0.01-10 wt%, and up to 10% by weight of antimony (Sb_2O_3). (Col3, line 39-47). The parameters encompass the parameters of the claims.

7. Regarding Claims 7 to 9. Eberle teaches a process for preparing acid anhydrides using the coated catalysts with o-xylene and naphthalene and an air stream charged to the reactor at 300C. (Col. 3,4). Furthermore, Eberle also specifies that the catalysts are formed in situ by burning out the binder. The process taught by Eberle encompasses the claimed process.

8. Regarding Claims 10-14. Eberle teaches a process of preparing acetic acid by gas-phase oxidation in a tube reactor using a coated catalyst comprising an inert support body and a catalytically active mixed oxide composition comprising one or more oxides selected from the group of transition metal oxides consisting of titanium oxide (TiO_2) at 5-90% by weight, of Vanadium Pentoxide (V_2O_5) at 1-50% by weight, with various promoters such as Cesium (Cs), and/or phosphorous (P) compounds in an aqueous copolymer dispersion of vinyl acetate/ethylene as binder at (α -olefin) in an amount of 5-40% by weight. (Col2,3,4,5,6). Eberle further discusses the charge of the supported catalysts in the tube reactor at different concentration and composition to optimize the reaction. (Col4, line 25). The process details and the composition of the catalyst taught by Eberlee encompass the process and the composition of the claimed pre-catalyst.

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9. Regarding Claims 15 to 17. Eberle teaches a copolymer binder of vinyl acetate/ethylene of 10-50% by weight, based on the solids content, with 0.1 -10% of Sb_2O_3 and /or Phosphorous compound, with 5-90% titanium oxide(TiO_2) and Vanadium Pentoxide (V_2O_5) at 1-50% by weight. The composition of the binder taught by Eberle encompasses or overlaps the composition of the claims.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. **Claims 1-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Eberle et al. in view of Okazaki et al.(4,510,274).

Eberle teaches a catalyst composition to be used in a gas phase oxidation of saturated, unsaturated hydrocarbons and aromatic hydrocarbon, selected from xylene, naphthalene or a mixture thereof, to produce carboxylic acids and/or carboxylic anhydrides. The catalyst is formed by using a support with a coated composition of titanium oxide(TiO_2) and Vanadium Pentoxide (V_2O_5), forming in situ in a tube reactor in an aqueous solution of an organic copolymer binder of vinyl acetate/ethylene. Eberle does not specifically teach that the copolymer binder of vinyl acetate/ethylene has a vinyl acetate content of at least 62 mol% or 63-70 mol%.

Okazaki teaches that an aqueous emulsion adhesive composition of vinyl acetate-ethylene comprises 60-90% of vinyl acetate and 5-40% of ethylene by weight, the high content of vinyl acetate preferred for improving the adhesive property (Col 4, lines 9-14).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided the vinyl acetate/ethylene copolymer binder in the catalyst composition of Eberle of 60-90% of vinyl acetate and 5-40% of ethylene by weight, as

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taught by Okazaki, as compositions of vinyl acetate/ethylene copolymer used for providing an aqueous emulsion adhesive composition, the high content of vinyl acetate preferred for improving the adhesive property. By providing a vinyl acetate/ethylene copolymer binder of 60-90% of vinyl acetate and 5-40% of ethylene by weight as taught by Okazaki, a copolymer of at least 62 mol% vinyl acetate or 63-70 mol% vinyl acetate, as claimed, is obviously provided.

“The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages”, In re Peterson 65 USPQ2d 1379 (CAFC 2003).

Also, In re Geisler 43 USPQ2d 1365 (Fed. Cir. 1997); In re Woodruff, 16 USPQ2d 1934 (CCPA 1976); In re Malagari, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

12. Regarding Claims 5, 12 and 17. Eberle teaches 5-90% by weight of TiO_2 , comparing to 60-99% by weight as claimed. Also, for V_2O_5 the percent by weight is 1-50%, comparing to 1-40% by weight as claimed. The parameters and compositions encompass or overlap the parameters and the compositions of the claims

13. Regarding Claims 6 and 14. Eberle teaches a use of promoters' such as Cs compound of 0.01-1.0 wt% and P compound at 0.01-10 wt%, and up to 10% by weight of antimony (Sb_2O_3). (Col3, line 39-47). The parameters encompass the parameters of the claims.

14. Regarding Claims 7 to 9. Eberle teaches a process for preparing acid anhydrides using the coated catalysts with o-xylene and naphthalene and an air stream charged to the reactor at 300C. (Col. 3,4). Furthermore, Eberle also specifies that the catalysts are

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formed in situ by burning out the binder. The process taught by Eberle encompasses the claimed process.

15. Regarding Claim 13. Eberle teaches a fixed bed reactor with two bed packings where the support bodies of different shape and size are in layers and different concentration and compositions of the active components are to be expected.(Col4.line25-30 and Col 6, line57). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the teaching of Eberle to optimize the conversion by loading more TiO_2 at the upstream of the reactor. In view that,

“The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages”, In re Peterson 65 USPQ2d 1379 (CAFC 2003).

Also, In re Geisler 43 USPQ2d 1365 (Fed. Cir. 1997); In re Woodruff, 16 USPQ2d 1934 (CCPA 1976); In re Malagari, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to COLETTE NGUYEN whose telephone number is (571)270-5831. The examiner can normally be reached on Monday-Thursday, 10:00-4:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer Mc Neil can be reached on (571)-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/COLETTE NGUYEN/
Examiner, Art Unit 4162

CN
June 16, 2008

/Melvin C Mayes/
Primary Examiner, Art Unit 1791